

What is claimed is:

SUB A

1. A method of producing a multi-layered wiring board comprising the steps of:

forming an insulating layer made of a photosensitive resin on a substrate for forming multi-layered wiring, and exposing and developing said insulating layer to form holes having a predetermined shape;

depositing a curable resin onto said insulating layer having said holes formed therein in such a manner as to bury said holes, heating said curable resin to form a cured thin film of said curable resin on the surface of said insulating layer; and

removing said curable resin in such a manner as to leave said cured thin film and to form via-holes having a reduced opening size by said cured thin film.

2. A method of producing a multi-layered wiring board according to claim 1, wherein said photosensitive resin is at least one member selected from the group consisting of an epoxy resin, an epoxy-modified acrylate resin, a cationic polymerization product of an epoxy resin, a phenol resin, a melamine resin, a carboxy-modified epoxy acrylate, and a cinnamate.

3. A method of producing a multi-layered wiring board according to claim 1, wherein said curable resin comprises a water-soluble resin or a water-soluble cross-linking agent.

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4. A method of producing a multi-layered wiring board according to claim 1, wherein said curable resin is at least one member selected from the group consisting of polymethylsiliceous siloxane, a melamine resin, an acrylate resin and an epoxy resin.

5. A method of producing a multi-layered wiring board according to claim 1, wherein said curable resin contains rubber particles consisting of a butadiene-acrylonitrile copolymer, and said method further comprises the step of chemically surface-roughening said cured thin film.

6. A method of producing a multi-layered wiring board according to claim 2, wherein said curable resin comprises a water-soluble resin or a water-soluble cross-linking agent.

7. A method of producing a multi-layered wiring board according to claim 2, wherein said curable resin is at least one member selected from the group consisting of polymethylsiliceous siloxane, a melamine resin, an acrylate resin and an epoxy resin.

8. A method of producing a multi-layered wiring board according to claim 3, wherein said curable resin contains particles of calcium carbonate or polybutadiene rubber.

9. A method of producing a multi-layered wiring board according to claim 4, wherein said curable resin contains particles of calcium carbonate or polybutadiene rubber.

10. A method of producing a multi-layered wiring board

A| including a plurality of stages of via-holes formed by repeating said process steps of claim 1, wherein said via-holes of upper stages are so formed as to possess a greater degree of reduction than said via-holes of lower stages.

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